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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,274	04/07/2005	James John Schmitt	ACA6276P1US	4986

7590 09/17/2007

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EXAMINER	
MCNELIS, KATHLEEN A	
ART UNIT	PAPER NUMBER
1742	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/525,274	SCHMITT ET AL.	
	Examiner	Art Unit	
	Kathleen A. McNelis	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) *8 and 9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,10 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claims Status

Claims 1-11 remain for examination wherein claims 1-5, 10 and 11 are amended and claims 8 and 9 are withdrawn from consideration.

Acknowledgement of RCE

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CRF 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.115, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/05/2007 has been entered.

Election/Restrictions

Applicant has elected sodium borate pursuant to a species restriction requirement (see pp. 2-4 of the 01/18/2007 Office action and response to argument 2 in the 06/29/2007 Advisory action). Therefore the following species were not examined:

1. Claim 1: boron oxide, calcium borate, boron nitride
2. Claim 2: calcium tetraborate
3. Claim 5: boron oxide, calcium borate, boron nitride
4. Claim 11: calcium tetraborate

As stated in the 6/29/2007 Advisory action, because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Status of Previous Rejections

The following rejections are withdrawn in view of amendments to the claims:

- Claims 1, 2 and 4 under 35 U.S.C. 103(a) as being unpatentable over Chinese patent No. 1153218 (CN '218),
- Claim 3 under 35 U.S.C. 103(a) as being unpatentable over Chinese patent No. 1153218 (CN '218) as applied to claim 1 and in further view of Morris (U.S. Pat. No. 6,689,184), and
- Claims 5-7, 10 and 11 under 35 U.S.C. 103(a) as being unpatentable over Chinese patent No. 1153218 (CN '218) as applied to claim 1.

The following rejections are maintained:

- Claims 1-7 and 11 under 35 U.S.C. 103(a) as being unpatentable over CN '218 in view of Soviet Union patent 1678867 (SU '867), or Stewart et al. (U.S. Pat. No. 3,816,099) or Lewis et al. (U.S. Pat. No. 3,809,547),
- Claim 10 under 35 U.S.C. 103(a) as being unpatentable over CN '218 in view of Soviet Union patent 1678867 (SU '867), or Stewart et al. (U.S. Pat. No. 3,816,099) or Lewis et al. (U.S. Pat. No. 3,809,547) as applied to claim 1, and further in view of Japanese patent 03-023243 (JP '243) and Ceramics Monthly (2001) and digitalfire.com (2001),
- Clams 1-7 and 11 under 35 U.S.C. 103(a) as being unpatentable over Banyai et al. (U.S. Pat. No. 4,919,711),
- Claim 10 under 35 U.S.C. 103(a) as being unpatentable over Banyai et al. (U.S. Pat. No. 4,919,711) as applied to claim 1, and further in view of Japanese patent 03-023243 (JP '243) and Ceramics Monthly (2001) and digitalfire.com (2001).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over CN '218 in view of Soviet Union patent 1678867 (SU '867), or Stewart et al. (U.S. Pat. No. 3,816,099) or Lewis et al. (U.S. Pat. No. 3,809,547).

CN '218 discloses a method for producing high temperature oxidized iron ore pellets using an additive of bentonite, carboxymethyl cellulose, boric acid, and boron sludge (abstract). Caboxymethyl cellulose is an organic binder.The pellets are made by mixing raw materials containing iron with an additive and manually or mechanically mixing to achieve uniformity then dried, preheated, calcined soaked and cooled (pg. 3 of translation), which is agglomeration. Examiner contends that the binder is substantially free of hydrophobic liquid since CN '218 teaches that it contains up to 15% moisture (1st ¶ of p. 3 of translation).

CN '218 discloses that green pellets are loaded into a furnace, kiln or calciner, where pellets are dried, preheated, and calcined (p. 3). Examiner contends that drying, preheating and calcining are stages of heating. In examples, calcine temperatures ranged from 1150 to 1200 °C (Table 3 p. 5 of translation). It is the examiner's position that the applicant has not established the criticality of the claimed temperature range of 1275 to 1350 °C and that the range of 1150 to 1200 °C is close enough to the claimed range of 1275 to 1350 °C that one of ordinary skill in the art would expect the same properties to result (see M.P.E.P § 2144.05 regarding close ranges). Further, it is well settled that where the principal difference between a claimed process and that taught by reference is a temperature difference, it is incumbent upon applicants to establish the criticality of that difference (Ex parte Khusid, et al., 174 USPQ 59).

CN '218 does not disclose that the additive is sodium borate (claims 1, 3 and 5), or that the sodium borate is sodium tetraborate (claims 2, 7 and 11).

SU '867 discloses a method of making iron ore pellets where a boron containing material is added (abstract) to metallurgically improve the properties of the pellets (Use/advantage). The boron containing material may be borax (i.e. sodium tetraborate) or boric acid (abstract),

indicating that boric acid and borax (i.e. sodium tetraborate) are art recognized equivalents or substitutes or suitable for the same purpose (See M.P.E.P. sections 2144.06 or 2144.07).

Stewart et al. discloses a method for producing metallic iron and titanium from titaniferous ores by mixing the ore with a flux (abstract) where the flux contains a suitable borate, e.g. boric acid or sodium tetraborate (borax) (col. 3 lines 31-45), indicating that boric acid and borax (i.e. sodium tetraborate) are art recognized equivalents or substitutes or suitable for the same purpose (See M.P.E.P. sections 2144.06 or 2144.07).

Lewis et al. discloses the use of oxides of boron in steel making, and teaches that boric acid and sodium tetraborate (borax) are suitable additives to provide oxides of boron (abstract), indicating that boric acid and borax (i.e. sodium tetraborate) are art recognized equivalents or substitutes or suitable for the same purpose (See M.P.E.P. sections 2144.06 or 2144.07).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use sodium tetraborate (borax) as taught by SU '867 or Stewart et al. or Lewis et al. in the pellets of CN '218 since SU '867 or Stewart et al. or Lewis et al. teach that sodium tetraborate (borax) is recognized in the art as equivalent or substitute for boric acid.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over CN '218 in view of Soviet Union patent 1678867 (SU '867), or Stewart et al. (U.S. Pat. No. 3,816,099) or Lewis et al. (U.S. Pat. No. 3,809,547) as applied to claim 1, and further in view of Japanese patent 03-023243 (JP '243) and Ceramics Monthly (2001) and digitalfire.com (2001).

CN '218 in view of SU '867 or Stewart et al. or Lewis et al. is applied as discussed above regarding claim 1.

CN '218 in view of SU '867 or Stewart et al. or Lewis et al. does not disclose that the source of sodium tetraborate (borax) is derived from ulexite, colemanite, Gerstley, Laguna Murray's and mixtures thereof.

JP '243 discloses a process for modifying slag with a boron containing oxide, wherein borax, colemenite or ulexite are suitably used as sources for the oxide (abstract), indicating that borax (i.e. sodium tetraborate), colemenite or ulexite are art recognized equivalents or substitutes or suitable for the same purpose (See M.P.E.P. sections 2144.06 or 2144.07).

Digitalfire.com (2001) discloses that Gerstley, Murray's, Lugana, Gillespie, ulexite and colemanite borates are substitutes.

Ceramics Monthly (2001) discloses that Gerstley, Laguna, Murray's and Gillespie borates are substitutes.

It would have been obvious to one of ordinary skill in the art to use ulexite, colemanite, Gerstley, Laguna, Murray's and/or Gillespie borates as taught by JP '243, Digitialfire,com and Ceramics Monthly in the process of CN '218 in view of SU '867 or Stewart et al. or Lewis et al. since JP '243 and Digitialfire.com and Ceramics Monthly teach that ulexite, colemanite, Gerstley, Laguna, Murray's and/or Gillespie borates are substitutes for each other and for Borax.

Clams 1-7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banyai et al. (U.S. Pat. No. 4,919,711).

Banyai et al. discloses a binder useful for agglomerating concentrated ore in the presence of water adding carboxymethyl cellulose (abstract) to iron ore (col. 5 lines 49-59). In example 3, sample 3-12 (Table 3, cols 9 and 10), iron ore (from example 1, col. 6 lines 5-20) is mixed with Aqualon ™ CMC 7HX (i.e. carboxymethyl cellulose; see footnote 3 of Table 2 of Banyai et al.) and sodium tetraborate (sample 3-12). Caboxymethyl cellulose is an organic binder. Banyai et al.

broadly discloses alkali metal salts of carboxymethly cellulose as binders (abstract), which have organic and inorganic character. Banyai et al. discloses that the agglomerated green pellets are dried and fired by slowly heating to preferably at least 2400 °F (i.e. about 1316 °C) where drying is performed at low temperature then firing at high temperature (col. 5 lines 34-48), which is equivalent to heating in stages. The range of at least about 1316 °C overlaps the claimed range of 1275-1350 °C. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a firing temperature of 1316-1350 °C, since Banai et al. teaches that temperatures of at least 2400 °F (i.e. about 1316 °C) are preferred.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Banyai et al. (U.S. Pat. No. 4,919,711) as applied to claim 1, and further in view of Japanese patent 03-023243 (JP '243) and Ceramics Monthly (2001) and digitalfire.com (2001).

Banyai et al. is applied as set forth above regarding claim 1.

Banyai et al. does not disclose that the source of sodium tetraborate (borax) is derived from ulexite, colemanite, Gerstley, Laguna Murray's and mixtures thereof.

JP '243 discloses a process for modifying slag with a boron containing oxide, wherein borax, colemenite or ulexite are suitably used as sources for the oxide (abstract), indicating that borax (i.e. sodium tetraborate), colemenite or ulexite are art recognized equivalents or substitutes or suitable for the same purpose (See M.P.E.P. sections 2144.06 or 2144.07).

Digitalfire.com (2001) discloses that Gerstley, Murray's, Lugana, Gillespie, ulexite and colemanite borates are substitutes.

Ceramics Monthly (2001) discloses that Gerstley, Laguna, Murray's and Gillespie borates are substitutes.

It would have been obvious to one of ordinary skill in the art to use ulexite, colemanite, Gerstley, Laguna, Murray's and/or Gillespie borates as taught by JP '243 and Digitialfire,com and Ceramics Monthly in the process of Banyai et al. since JP '243, Digitialfire,com and Ceramics Monthly teach that ulexite, colemanite, Gerstley, Laguna, Murray's and/or Gillespie borates are substitutes for each other and for Borax.

Response to Arguments

See 06/29/2007 Advisory action for response to arguments.

Arguments related to amended claim features have been addressed in the rejection grounds above.

Rejections based on the alternative calcium fluoride as binder additive have been withdrawn in view of the deletion of this alternative from claims 1, 5 and 11.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen A. McNelis whose telephone number is 571 272 3554. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAM
09/13/2007

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